Blood Safety

Blood has been called the river of life, and for good reason. Blood transports life-giving oxygen and nutrients. Blood automatically hardens into a clot when we get cut. Blood helps our immune system fight off enemies.

Each year, nearly 5 million Americans need a blood transfusion to restore lost blood. Fortunately, the vast majority of transfusions are effective and cause no harm — thanks in part to National Heart, Lung, and Blood Institute-supported studies of blood, the immune system, and infectious disease transmission.

NHLBI-funded research has made many important contributions to transfusion medicine and blood banking methods, and these improvements have had a major impact on the nation's public health. Examples include new methods to screen donated blood for contamination by viruses like HIV and hepatitis, new donor-screening safeguards, and new ways to track the availability of blood for donation.

Today, blood banks protect the nation's blood supply by carefully screening blood for contaminants, using nucleic acid testing that was developed through NHLBI research. Before this method was available, blood-donor screening relied on an imperfect technique that identified circulating antibodies. Unfortunately, with that method, it often took three weeks or more for the antibodies to appear after a person came in contact with a virus. Other NHLBI-supported advances — such as the development of modern, user-friendly, computer-assisted donor-screening methods — further improve safety by providing blood donors with a safe, secure environment to answer questions about exposure to potential infectious threats.

The nation's blood supply is the safest it has ever been. However, we can't let our guard down. Ongoing NHLBI-supported research monitors potential threats such as dengue virus, the parasite Babesia, and other illnesses that can be spread through blood. Other research is determining whether variations in blood storage affect tranfusion safety and effectiveness.

Imagine the Future ...

New blood-cleansing methods remove contaminants from donor blood.

Artificial blood developed for use in combat is used routinely in ambulances and in hospitals.

The NIH's National Heart, Lung, and Blood Institute provides global leadership for research, training, and education programs to promote the prevention and treatment of heart, lung, and blood diseases and enhance the health of all individuals so that they can live longer and more fulfilling lives.